IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Jeff EDER

Serial No.: 08/999,245

Filed: December 10, 1997

For: A method of and system for analyzing, modeling and valuing elements of a business enterprise

Group Art Unit: 3692

Customer Number: 53787

Examiner: Frantzy Poinvil

Commissioner of Patents
Washington, D.C. 20321

Supplemental Brief on Appeal

Sir or Madam:

The Appellant respectfully appeals the rejection of claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 66, claim 68, claim 69, claim 70, claim 72, claim 73, claim 74, claim 75, claim 76, claim 78, claim 79, claim 80 and claim 81 in the September 10, 2007 Office Action for the above referenced application.

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1. Real party in interest

Asset Reliance, Inc. (dba Asset Trust, Inc.) is the assignee of 100% interest in the above referenced patent application.

2. Related appeals

An appeal for U.S. Patent Application 09/761,670 filed January 18, 2001 may be affected or have a bearing on this appeal. An appeal for U.S. Patent Application 10/283,083 filed October 30, 2002 may be affected or have a bearing on this appeal.

3. Status of Claims

Claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 66, claim 68, claim 69, claim 70, claim 72, claim 73, claim 74, claim 75, claim 76, claim 78, claim 79, claim 80 and claim 81 are rejected and are the subject of this appeal. Claims 44, 47, 53, 65, 67, 71 and 77 are rejected and amended and are not part of this appeal. Claims 44, 47, 53, 65, 67, 71 and 77 are not included in the appeal because the Examiner objected to their inclusion in the appeal on 4/28/2008. Claims 1 through 43 and 60 through 64 are cancelled. Claim 82 is withdrawn.

4. Status of Amendments

An amendment/reply submitted on November 30, 2007 that included amendments to claims 44, 47, 53, 65, 67, 71 and 77. This amendment was not entered and the amended claims are not included in this appeal.

5. Summary of Claimed Subject Matter

One embodiment of a method of and system for analyzing, modeling and valuing elements of a business enterprise according to the present invention is best depicted in Figures 1 – 15 of the specification for the instant application. Figure 1 gives an overview of the major processing steps which include converting and storing data from a plurality of database management systems for use in analysis, analyzing the data as required to: optionally value growth options, identify value drivers by element of value, develop a predictive model for each component of enterprise value and value the elements of value. In accordance with 37 CFR 41.37 a concise explanation of the subject matter defined in each of the independent claims involved in the appeal is included in the summary of claimed subject matter.

Independent Claim 44 - One embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 44 where an article of manufacture guides the conversion and storage of data aggregated from a plurality of management systems in accordance with a common schema. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value. The model of enterprise cash flow by element and component of value is then used to determine the current operation value of one or more elements of value. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the performance indicators of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified performance indicators are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification. The models used to determine the value impact of each element of

value are also use for: predicting an impact of a change to one or more elements of value on enterprise cash flow, identifying a set of changes to one or more elements of value that will optimize enterprise cash flow and producing financial statements that identify value and value changes by element of value.

Dependent claims

The limitations associated with dependent claim 45 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 46 are described in several places including line 16, page 56 through line 9, page 59 of the specification.

The limitations associated with dependent claim 48 are described in line 1, page 26 through line 14, page 26.

The limitations associated with dependent claim 49 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 50 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 51 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 52 are described in a variety of places including FIG. 10.

Independent Claim 53 - A second embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 53 where a process converts and stores data aggregated from a plurality of management systems in accordance with a common schema. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is used to calculate the current operation value contribution for each element of value. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in

one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the performance indicators of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified performance indicators are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification. The calculated values are then used to produce financial statements that include the calculated current operation values for the element of values as described in FIG. 13 reference number 802 – 806 and line 26, page 65 through line 32, page 67.

Dependent claims

The limitations associated with dependent claim 54 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 55 are described in several places including

table 1, page 9, and Table 16, page 31 of the specification.

The limitations associated with dependent claim 56 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 57 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 58 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 59 are described in several places including FIG. 10.

Independent Claim 65 - A third embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 65 where a process converts and stores data aggregated from a plurality of management systems in accordance with a common schema. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is then used to identify and optimal set of changes to the elements of value. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify one or more performance indicators for each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified performance indicators are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The

capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The component of value models are then optimized using genetic algorithms as described using reference numbers 325, 330, 335, 340, 345, 350 and 355 from FIG. 6A to identify changes to the elements of value that will optimize performance. Cross referenced U.S. Patent 5,615,109 also describes an alternate method that could be used for identifying an optimal set of changes to the elements of value.

Dependent claim

The limitations and activities associated with dependent claim 66 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification. The activities comprise identifying a common set of attributes in a plurality of data dictionaries and aggregating data from a plurality of database management systems in accordance with said common attributes.

Independent Claim 67 - A fourth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 67 where an article of manufacture guides conversion and storage of event data from a plurality of management systems into an application database for use in processing. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is used to forecast an impact of a response to an event. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the performance indicators of each element of value that contribute to the value of each component of

value and identify sub-elements of value for each element of value. The identified performance indicators are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as to develop neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. Event data are then input to the neural network models of cash flow by component of value as required to forecast an impact of one or more events on financial performance in a manner that is well known. An optimal response can be identified using the method detailed above for claim 65.

Dependent claims

The limitations associated with dependent claim 68 are described in several places including FIG. 10.

The limitations associated with dependent claim 69 are described in several places including FIG. 10.

The limitations associated with dependent claim 70 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

Independent claim 71 - A fifth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 71 where a machine converts and stores data aggregated from a plurality of management systems in accordance with a common schema for use in processing. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value. The model of enterprise cash flow by element and component of value is then used to determine the current operation value of

one or more elements of value. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the performance indicators of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified performance indicators are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification. The models used to determine the value impact of each element of value are also use for: predicting an impact of a change to one or more elements of value on enterprise cash flow, identifying a set of changes to one or more elements of value that will optimize enterprise cash flow and producing financial statements that identify value and value changes by element of value.

Dependent claims

The limitations associated with dependent claim 72 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification. It is well known to those of average skill in the art that the databases for the listed systems are typically relational database systems.

The limitations associated with dependent claim 73 are described in several places including FIG. 1, reference number 25 and line 15, page 12 through line 16 page 12 of the specification.

The limitations associated with dependent claim 74 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 75 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 76 are described in several places including line 12, page 8 through line 22, page 8 of the specification.

Independent claim 77 A sixth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 77 where a process converts and stores data aggregated from a plurality of management systems in accordance with a common schema for use in processing. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is used to calculate the current operation value contribution for each element of value. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the performance indicators of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified

performance indicators are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification.

Dependent claims

The limitations associated with dependent claim 78 are described in several places including FIG. 1, reference number 25 and line 15, page 12 through line 16 page 12 of the specification.

The limitations associated with dependent claim 79 are described in several places including FIG. 1, reference number 5 and line 20, page 12 of the specification.

The limitations associated with dependent claim 80 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 81 are described in table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

Grounds of rejection to be reviewed on appeal

Issue 1 - Whether claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable under 35 USC 103(a) over U.S. Patent 4,989,141 (hereinafter, Lyons) with

consideration to Database Management by Gordon C. Everest (hereinafter, Everest) ?

Issue 2 - Whether claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 3 - Whether claim 66 is patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 4 - Whether claim 68, claim 69 and/or claim 70 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 5 - Whether claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 6 - Whether claim 78, claim 79, claim 80 and/or claim 81 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The Argument

Grouping of Claims

For each ground of rejection which Appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

Issue 1 - Whether claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. The primary reason is that the cited combination of documents (Lyons and Everest) and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 – The first reason claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is that the proposed combination would destroy the ability of the Lyons invention to function. It is well established that: *when a modification of a reference destroys the intent, purpose or function of an invention such a proposed modification is not proper and the prima facie cause of obviousness cannot be properly made (In re Gordon 733 F.2d 900, 221 U.S.PQ 1125 Fed Circuit 1984).*

Everest teaches the use of conventional database management systems. These conventional database management systems rely on logical data structures that enable enterprise wide storage

and management of all types of data with minimal redundancy. Everest lists the data structures used for conventional data storage in a taxonomy (see page 43, Evidence Appendix).

The Lyons invention stores data in a predetermined pattern relative to the SEPT value of the data, a logical data structure that is not listed in the Everest taxonomy. The Lyons specification clearly states that this unconventional data storage method is required to enable the four dimensional analysis of data that the Lyons invention was created to support. *Unlike conventional database management systems or worksheet applications, the Lyons invention allows for a four dimensional analysis of all financial data. In particular, the data stored in the system is organized into four business classifications or dimensions, namely Schedule, Entity, Period and Type (SEPT)* (Lyons C4, L 17 – 23). The Lyons data storage method creates massive redundancy that provides some end-user benefits. Data is limited to financial schedule data and is read from the datastore by various report and spreadsheet generating functions which convert data associated with particular SEPT values to desired output formats (Lyons, C2, L 58 – 61).

The Lyons specification clearly teaches that modifying the Lyons invention to use the conventional database management systems taught by Everest and the claimed invention would destroy the ability of the Lyons invention to support its primary function, four dimensional data analysis. Because the cited combination would destroy the functionality of the Lyons invention (the primary reference), the teachings of the cited combination of documents are not sufficient to render the claims prima facie obvious.

Reason #2 - The second reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 is that the cited combination does not teach or suggest one or more limitation for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).* Limitations not taught or suggested by the cited combination include:

1) Claim 44 (affects all of the claims under this issue, affects claims 45, 51 and 52 directly). Limitations not taught or suggested include:

a) using a series of models to identify one or more performance indicators for each of one or more elements of value that contribute to one or more components of value,

b) creating a summary of the performance indicators for each element of value,

c) developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries,

d) aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,

e) predicting an impact of a change to one or more elements of value on enterprise cash flow,

f) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow, and

g) removing data associated with enterprise growth options.

2) Claim 45 (also affects claim 46 directly). Limitations not taught or suggested include categories of value.

3) Claim 46 (also affects claim 48 directly). Limitations not taught or suggested include a change in capital.

4) Claim 52. Limitations not taught or suggested include a common network schema.

Reason #3 - The third reason claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is Reason #2 listed under Issue #2.

Reason #4 The fourth reason that claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is that the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983)).*" Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited combination teaching away from the claimed invention include:

1) The claimed invention teaches the development and use of a model of an enterprise and the use of said model to: forecast cash flow, identify a contribution of a plurality of elements of value to cash flow and calculate a value for a plurality of elements of value based on the identified contribution (see claim 44 and claim 47). Lyons teaches away from the claimed method by teaching and relying on the use of data from balance sheets and other financial statements. As is well known to those of average skill in the art, the use of data from these financial statements implicitly teaches: a reliance on historical cost instead of cash flow contribution for valuation and a reliance on data sources that exclude the listed elements of value, and

2) The claimed invention teaches the use of a common schema for the entire database (see claim 44). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The*

userschema may use different data names, reflect a different data structure and refer to only portions of the database....The userschema is the fundamental component_of a DBMS architecture for achieving sharability and evolvability (page 41, Evidence Appendix and Lyons C7, L 62 – C8, L55). See Reason #3 under Issue 1 and Reason #2 under Issue 2 for a detailed discussion of the Lyons inventions reliance on data managed by a plurality of users.

Reason #5 – The fifth reason claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is Reason #3 listed under Issue #2.

Reason #6 - The sixth reason claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is that the assertions regarding the alleged obviousness of the rejected claims are not compliance with the requirements of the Administrative Procedures Act and are therefore moot. The Appellant respectfully submits that discussion in the preceding paragraphs (Reason #1 through Reason #5) clearly shows that the instant Office Action failed to provide even a scintilla of evidence to support the allegation that the claim is obvious and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the obviousness rejection of claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 also fails to pass the arbitrary and capricious test because there is no rational connection between the conclusion of obviousness and fact findings:

a) related to the instant application which previously found similar claims to be patentable (see Evidence Appendix, pages 56 - 57), and/or

b) the fact findings for U.S. Patent 7,461,025 that found that a similar invention was new, novel and non-obvious. The effective filing date for the application that matured into U.S. Patent 7,461,025 was four years after the priority date of the instant application.

Summarizing the above discussion, the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. This failure provides additional evidence that the claimed invention is new, novel and non-obvious.

Issue 2 - Whether claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. The primary reason is that the cited combination (Lyons and Everest) and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 54, claim 55, claim 56, claim 57, claim 58

and/or claim 59 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Limitations not taught or suggested by the cited combination include:

1) Claim 53 (affects all of the claims under this issue, affects claims 54, 56, 57, 58 and 59 directly). Limitations not taught or suggested include:

a) using a series of models to identify one or more performance indicators for each of one or more elements of value that contribute to one or more components of value,

b) creating a summary of the performance indicators for each element of value,

c) developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries,

d) aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,

e) predicting an impact of a change to one or more elements of value on enterprise cash flow,

f) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow,

g) a network model of actual and forecast cash flow,

h) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets,

i) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others,

j) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others where a selective crossover produces a chromosome exchange between the subsets,

k) a model where selective crossover occurs between two or more successive generations, and

l) the removal of data associated with enterprise growth options.

2) Claim 55. Limitations not taught or suggested include elements of value selected from the group consisting of brands, customers, employees, strategic partnerships and vendor relationships. It is well known to those of average skill in the art that the balance sheets manipulated by Lyons do not include the elements of value listed above. Everest has no relevant teachings.

3) Claim 56. Limitations not taught or suggested include forecast event data and historical event data.

4) Claim 59. Limitations not taught or suggested include a common network schema.

Reason #2 - The second reason claim 54, claim 55, claim 56, claim 57, claim 58 and claim 59 are patentable is that the cited combination would require a change in the end user control principle of operation of the Lyons invention. MPEP 2143.01 provides that when "the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)". Consistent with its function of using four-dimensional financial data analysis to enable users to create reports, end-user control is one of the principles of operation of the Lyons invention. This principle dictated the development of a software package that includes features such as:

a) User-controlled data dictionaries. Each data dictionary in the Lyons invention has the simplest possible function – it defines one type of data (Lyons, C7, L 62 – C8, L55). Lyons teaches that five (5) of these separate, simple, user-controlled data dictionaries are required for system operation (along with one optional data dictionary), by way of contrast the claimed invention teaches the use of a single, centralized data dictionary; and

b) User-controlled data management. Consistent with its goal of providing user defined capabilities for creating reports, the Lyons invention provides each of a plurality of users with a number of functions for flexibly defining and managing the way stored data are organized, by way of contrast the claimed invention teaches data storage in accordance with a single, common schema and does not provide options for a plurality of users to manage the way stored data are organized. In a similar fashion, the Everest system emphasizes comprehensive, centralized control in order to maximize efficiency and stability. Everest specifically states that: "a shared database environment requires central control to coordinate the collection and use of data" (see page 40, Evidence Appendix).

If the Lyons invention were modified to the incorporate centralized control principle taught by Everest and the claimed invention, then the end-user control principle of operation of the Lyons invention would be changed. Because replicating the claimed functionality requires a change in the principle of operation of the Lyons invention (the primary reference), the teachings of the documents are not sufficient to render the claims prima facie obvious.

Reason #3 - The third reason claim 54, claim 55, claim 56, claim 57, claim 58 and claim 59 are patentable is that the Examiner has not been able to explain the rationale for combining the Everest and Lyons teachings in order to replicate the functionality of the claimed invention. *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning*

with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).'" In particular, the Examiner has failed to establish a prima facie case obviousness by failing to explain why the conventional database management systems taught by Everest should be combined with the Lyons invention. This omission is particularly troubling when one considers that the Lyons invention was created specifically to overcome the limitations of conventional database management systems (Lyons C4, L 17 – 23) and the Lyons specification clearly teaches that modifying the Lyons invention to use the conventional database management systems taught by Everest and the claimed invention would destroy the ability of the Lyons invention to support its primary function, four dimensional data analysis.

Reason #4 - The fourth reason claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is Reason #1 listed under Issue #1.

Reason #5 - The fifth reason that claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is Reason #4 listed under Issue #1.

Reason #6 - The sixth reason claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is Reason #6 listed under Issue #1.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention is new, novel and non-obvious.

Issue 3 - Whether claim 66 is patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination (Lyons and Everest) and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 66 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).* Claims with limitations not taught or suggested by the cited combination include:

1) Claim 65 (also affects claim 66 directly). Limitations not taught or suggested include:

a) using neural network models to identify one or more performance indicators for each of one or more elements of value,

b) identifying one or more value drivers from said indicators,

c) identifying one or more value drivers from said indicators and defining a contribution summary for each element of value for each component of value using said value drivers,

d) creating a model of current operation financial performance by element and component of value using said contribution summaries,

e) simulating a current operation financial performance using said model as required to identify changes by element of value that will optimize one or more aspects of current operation financial performance

f) automatically aggregating enterprise related event data from a plurality of database management systems into files or tables in a common database.

2) Claim 66. Limitations and activities not taught or suggested include:

a) using a common data dictionary to identify a common set of attributes in the enterprise related data from the plurality of database management systems, and

b) identifying common attributes and automatically integrating data from a plurality of database management systems.

Reason # 2 - The second reason that claim 66 is patentable is that the all the prior art fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983))*." Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the prior art teaching away from the claimed invention include:

1) The claimed invention teaches the development and use of a model of an enterprise and the use of said model to: forecast cash flow, identify a contribution of a plurality of elements of value to cash flow and calculate a value for a plurality of elements of value based on the identified contribution (see claim 44 and claim 47). Lyons teaches away from the claimed method by teaching and relying on the use of data from balance sheets and other financial statements. As is well known to those of average skill in the art, the use of data from these financial statements implicitly teaches: a reliance on historical cost instead of cash flow contribution for valuation and a reliance on data sources that exclude the listed elements of value, and

2) The claimed invention teaches the use of a common schema for the entire database (see claim 44). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The userschema may use different data names, reflect a different data structure and refer to only portions of the database....The userschema is the fundamental component_of a DBMS architecture for achieving sharability and evolvability* (page 41, Evidence Appendix and Lyons C7, L 62 – C8, L55). See Reason #3 under Issue 1 and Reason #2 under Issue 2 for a detailed discussion of the Lyons inventions reliance on data managed by a plurality of users.

3) The claimed invention teaches the use of neural network models to identify: indicators for use in element of value modeling and a net contribution to current operation value for each element of value (see claim 65). Lyons teaches away from this approach in several ways: by teaching that the user - not a model or series of models - is responsible for identifying the relationships between the data being analyzed (Lyons, C27, L25 – 38); by limiting data storage after external processing to data that appears in a report format (Lyons, C2, L46 - 50) – this prevents the use of a series of models; by limiting other programs to processing financial schedule data stored in the datastore (Lyons C20, L62 – C21, L2) – this prevents the use of neural network models; and by storing data in an unconventional manner that is designed to support spreadsheets and four dimensional data analysis (Lyons, C1, L 20 – C2, L 66).

4) The claimed invention teaches the conventional storage of data in files or tables (see claim 65 and 66). Lyons teaches away by teaching and relying on an unconventional data storage method where all data associated with a particular Schedule, Entity, Period and Type (SEPT) are identified by a SEPT value and all data associated with a particular SEPT value <u>are stored in a predetermined pattern relative to the SEPT value in a single, central datastore</u> (Lyons, C2, L45 – 50). Lyons teaches that this unconventional data storage method enables the four dimensional analysis of data the Lyons invention was developed to provide.

5) References provided by the Appellant (Rappaport) and the U.S.P.T.O. (Bielinski) teach away from the method of value driver identification and use incorporated in the claimed invention in a number of ways (see Evidence Appendix, pages 44 – 46 for a summary).

<u>Reason #3</u> - The third reason claim 66 is patentable is Reason #1 listed under Issue #1.

<u>Reason #4</u> – The fourth reason claim 66 is patentable is Reason #6 listed under Issue #1.

<u>Reason #5</u> - The fifth reason claim 66 is patentable is Reason #2 listed under Issue #2.

<u>Reason #6</u> - The sixth reason claim 66 is patentable is Reason #3 listed under Issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. This failure provides additional evidence that the claimed invention is new, novel and non-obvious.

Issue 4 - Whether claim 68, claim 69 and/or claim 70 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination (Lyons and Everest) and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 68, claim 69 and/or claim 70 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Claims with limitations not taught or suggested by the cited combination include:

1) Claim 67 (also affects claims 68, claim 69 and 70 directly). Limitations not taught or suggested include:

a) using a series of models to identify one or more performance indicators for each of one or more elements of value that contribute to one or more components of value,

b) creating a summary of the performance indicators for each element of value,

c) developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries,

d) aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,

e) predicting an impact of a change to one or more elements of value on enterprise cash flow,

f) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow,

g) a network model of actual and forecast cash flow,

h) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets,

i) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others,

j) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others where a selective crossover produces a chromosome exchange between the subsets, and

k) a model where the selective crossover occurs between two or more successive generations

l) removing data associated with enterprise growth options,

m) using a series of models,

n) identifying one or more relationships between each data source data dictionary and an application database data dictionary,

o) converting said data source data to a common schema by using said relationships in an application software segment,

p) storing said converted event data in an application database for use in processing,

q) forecast an impact of a response to one or more events from the plurality of events, and

r) identify an optimal response to one or more events from the plurality of events

2) Claim 68. Limitations not taught or suggested include a common schema that is defined by an application database schema.

3) Claim 69. Limitations not taught or suggested include a common schema that further comprises a network schema.

Reason #2 - The second reason that claim 68, claim 69 and/or claim 70 are patentable is because the prior art fails to establish a prima facie case of obviousness because it all teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983)).*" Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the prior art teaching away from the claimed invention include:

1) The claimed invention teaches the use of an application software segment to convert data to a common schema (see claim 67). Everest teaches that the conversion of data is a database function (Everest page 409, see page 42, Evidence Appendix) *"it is highly desirable for data conversion to be performed by the same underlying modules in the database control system"*;

2) The claimed invention teaches the development and use of a model of an enterprise and the use of said model to: forecast cash flow, identify a contribution of a plurality of elements of value to cash flow and calculate a value for a plurality of elements of value based on the identified contribution (see claim 44 and claim 47). Lyons teaches away from the claimed method by teaching and relying on the use of data from balance sheets and other financial statements. As is well known to those of average skill in the art, the use of data from these financial statements

implicitly teaches: a reliance on historical cost instead of cash flow contribution for valuation and a reliance on data sources that exclude the listed elements of value, and

3) The claimed invention teaches the use of a common schema for the entire database (see claim 44). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The userschema may use different data names, reflect a different data structure and refer to only portions of the database....The userschema is the fundamental component_of a DBMS architecture for achieving sharability and evolvability* (page 41, Evidence Appendix and Lyons C7, L 62 – C8, L55). See Reason #3 under Issue 1 and Reason #2 under Issue 2 for a detailed discussion of the Lyons inventions reliance on data managed by a plurality of users.

4) The claimed invention teaches the use of network models to identify: indicators for use in element of value modeling and a net contribution to current operation value for each element of value (see claim 67). Lyons teaches away from this approach in several ways: by teaching that the user - not a model or series of models - is responsible for identifying the relationships between the data being analyzed (Lyons, C27, L25 – 38); by limiting data storage after external processing to data that appears in a report format (Lyons, C2, L46 - 50) – this prevents the use of a series of models; by limiting other programs to processing financial schedule data stored in the datastore (Lyons C20, L62 – C21, L2) – this prevents the use of a series of network models; and by storing data in an unconventional manner that is designed to support spreadsheets and four dimensional data analysis (Lyons, C1, L 20 – C2, L 66).

5) References provided by the Appellant (Rappaport) and the U.S.P.T.O. (Bielinski) teach away from the method of value driver identification and use incorporated in the claimed invention in a number of ways (see Evidence Appendix, pages 44 – 46 for a summary).

Reason #3 - The third reason claim 68, claim 69 and/or claim 70 are patentable is Reason #1 listed under Issue #1.

Reason #4 – The fourth reason claim 68, claim 69 and/or claim 70 are patentable is Reason #6 listed under Issue #1.

Reason #5 - The fifth reason claim 68, claim 69 and/or claim 70 are patentable is Reason #2 listed under issue #2.

Reason #6 - The sixth reason claim 68, claim 69 and/or claim 70 are patentable is Reason #3 listed under issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention is new, novel and non-obvious.

Issue 5 - Whether claim 72, claim 73, claim 74, claim 75 and claim 76 are patentable over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination (Lyons and Everest) and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 72, claim 73, claim 74, claim 75 and/or claim 76 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Claims with limitations not taught or suggested by the cited combination include:

1) Claim 71 (affects claims 72, claim 73, claim 74, claim 75 and 76 directly). Limitations not taught or suggested include:

a) analyzing data with a series of models to identify one or more performance indicators for each of one or more elements of value that impact one or more components of value and a value of the element of value

b) analyzing data with a series of models to identify one or more performance indicators for each of one or more elements of value that impact one or more components of value and a value of the element of value and create a summary of said performance indicators,

c) developing a model of an actual and a forecast enterprise cash flow by a component of value and element of value using said summaries,

d) using the model to calculate a current operation value contribution for each of one or more elements of value,

e) obtaining a plurality of data dictionaries and event data from a plurality of data sources via a network connection,

f) identifying one or more relationships between each data source data dictionary and an application database data dictionary,

g) converting said data source data to a common schema by using said relationships in an application software segment,

h) storing said converted event data in an application database for use in processing,

i) predicting an impact of a change to one or more elements of value on enterprise cash flow,

j) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow,

k) elements of value selected from the group consisting of brands, customers, employees, partnerships, vendor relationships and combinations thereof,

l) modeling cash flow only after removing data associated with all enterprise growth options, and

m) where the cash flow for each element of value by a component of value comprises a net cash flow comprised of an element of value contribution to each component of value net of its impact on one or more other elements of value.

2) Claim 74. Limitations not taught or suggested include database management systems that are obtained from the group consisting of operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, an Intranet and combinations thereof. Everest teaches the use of a single database management system and does not mention an Intranet. Lyons teaches the use of data from systems that produce financial schedules (basic and advanced financial systems) and does not mention an Intranet.

3) Claim 75. Limitations not taught or suggested include elements of value and components of value.

4) Claim 76. Limitations not taught or suggested include the automated conversion of data.

Reason # 2 - The second reason that claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is because the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983)).*" Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited combination teaching away from the claimed invention include:

1) The claimed invention teaches the use of an application software segment to convert data to a common schema (see claim 71). Everest teaches that the conversion of data is a database function (Everest page 409, see page 42, Evidence Appendix) *"it is highly desirable for data conversion to be performed by the same underlying modules in the database control system"*;

2) The claimed invention teaches the use of a common schema (see claim 71). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The userschema may use different data names, reflect a different data structure and refer to only portions of the*

database.…The userschema is the fundamental component of a DBMS architecture for achieving sharability and evolvability (page 41, Evidence Appendix and Lyons C7, L 62 – C8, L55);

3) The claimed invention teaches the development and use of a model of enterprise cash flow to identify a contribution and a value for elements of value such as brands, customers, employees, production equipment strategic partnerships and vendor relationships (see claim 71). Lyons teaches away from this approach by teaching and relying on the use of data from balance sheets and other financial statements. The use of data from these financial statements teaches away from the claimed method by teaching a reliance on historical cost instead of cash flow contribution and by teaching reliance on data sources that exclude the listed elements of value (facts well known to those of average skill in the art).

4) The claimed invention teaches the use of network models to identify: indicators for use in element of value modeling and a net contribution to current operation value for each element of value (see claim 71). Lyons teaches away from this approach in several ways: by teaching that the user - not a model or series of models - is responsible for identifying the relationships between the data being analyzed (Lyons, C27, L25 – 38); by limiting data storage after external processing to data that appears in a report format (Lyons, C2, L46 - 50) – this prevents the use of a series of models; by limiting other programs to processing financial schedule data stored in the datastore (Lyons C20, L62 – C21, L2) – this prevents the use of a series of models; and by storing data in an unconventional manner that is designed to support spreadsheets and four dimensional data analysis (Lyons, C1, L 20 – C2, L 66).

5) References provided by the Appellant (Rappaport) and the U.S.P.T.O. (Bielinski) teach away from the method of value driver identification and use incorporated in the claimed invention in a number of ways (see Evidence Appendix, pages 44 – 46 for a summary).

Reason #3 - The third reason claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #2 listed under Issue #1.

Reason #4 – The fourth reason claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #6 listed under Issue #1.

Reason #5 - The fifth reason claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #2 listed under Issue #2.

Reason #6 - The sixth reason claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #3 listed under Issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention is new, novel and non-obvious.

Issue 6 - Whether claim 78, claim 79, claim 80 and claim 81 are patentable over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination (Lyons and Everest) and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 78, claim 79, claim 80 and/or claim 81 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Claims with limitations not taught or suggested by the cited combination include:

1) Claim 77 (also affects claims 78, claim 79, claim 80 and claim 81 directly). Limitations not taught or suggested include:

a) analyzing data with a series of models to identify one or more performance indicators for each of one or more elements of value that impact one or more components of value and a value of the element of value,

b) analyzing data with a series of models to identify one or more performance indicators for each of one or more elements of value that impact one or more components of value and a value of the element of value and create a summary of said performance indicators,

c) developing a model of an actual and a forecast enterprise cash flow by a component of value and element of value using said summaries,

d) using the model to calculate a current operation value contribution for each of one or more elements of value,

e) obtaining a plurality of data dictionaries and event data from a plurality of data sources via a network connection,

f) identifying one or more relationships between each data source data dictionary and an application database data dictionary,

g) converting said data source data to a common schema by using said relationships in an application software segment,

h) storing said converted event data in an application database for use in processing,

i) accessing a plurality of enterprise data and data dictionaries via a back-end interface coupled to a plurality of data sources

j) modeling financial performance only after removing data associated with all enterprise growth options,

k) a common network schema,

l) a series of models,

m) a plurality of data sources that comprise database management systems for a plurality of enterprise transaction systems, and

n) identifying one or more changes by element of value that will optimize one or more aspects of current operation financial performance.

2) Claim 78. Limitations not taught or suggested include a back-end interface that comprises a network connection. Everest teaches the use of a separate computer for a back-end interface.

3) Claim 79. Limitations not taught or suggested include accessing, converting, integrating and storing data from an Internet.

4) Claim 80. Limitations not taught or suggested include elements of value and components of value.

5) Claim 81. Limitations not taught or suggested include database management systems that are obtained from the group consisting of operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, an Intranet and combinations thereof. Everest teaches the use of a single database management system and does not mention an Intranet. Lyons teaches the use of data from systems that produce financial schedules (basic and advanced financial systems) and does not mention an Intranet.

Reason # 2 - The second reason that claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #2 listed under Issue #5.

Reason #3 - The third reason claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #1 listed under Issue #1.

Reason #4 – The fourth reason claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #6 listed under Issue #1.

Reason #5 - The fifth reason claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #2 listed under Issue #2.

Reason #6 - The sixth reason claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #3 listed under Issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention is new, novel and non-obvious.

8. Conclusion

As detailed above, the evidence used to support the rejection of the pending claims consists of a document combination that fails to support a prima facie case of obviousness for a single claim. For this reason and the reasons listed below, the Appellant respectfully but forcefully contends that each claim is patentable.

The Appellant notes that with respect to the prosecution of the instant application, it appears that the U.S.P.T.O. has not fully complied with the requirements set forth in the APA, 35 USC 3 and 35 USC 131. Among other things, the Appellant specifically notes that:

a) There appears to have been numerous instances of non-compliance with MPEP 904.03;

b) The prosecution of the instant application has been substantially delayed for a variety of reasons. At least part of the delay appears to have occurred because the Examiner refused to respond to reasonable requests for a copy of a missing office action;

c) The unreasonable and apparently non-statutory delays have extended into the appeal process (see pages 58 and 59, Evidence Appendix) and to continuation applications which have not been prosecuted in accordance with 37 CFR 1.102;

d) The prior art review for the instant application appears to have been completed under a different standard than that used for the review and allowance of other, similar applications such as 7,461,025; and

e) The same Examiner previously found similar claims to be allowable (see pages 56 and 57, Evidence Appendix). Since that time the Examiner has authored or signed numerous Office Actions that provide substantial additional evidence memorializing the novelty, non-obviousness and newness of the claimed invention.

In spite of these facts, the application has not been allowed. Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,
Asset Trust, Inc.

/B.J. Bennett/

B.J. Bennett, President
Dated: March 20, 2009

9. Claims Appendix

45. The program storage device of claim 44 wherein the enterprise related data are aggregated in accordance with a common data dictionary that identifies a common set of attributes selected from the group consisting of: category of value, component of value, element of value, currency, unit of measure and combinations thereof.

46. The program storage device of claim 45, wherein the components of value are selected from the group consisting of revenue, expense, change in capital and combinations thereof.

47. The program storage device of claim 44, wherein the elements of value are selected from the group consisting of brands, customers, employees, production equipment, strategic partnerships, vendor relationships and combinations thereof.

48. The program storage device of claim 46, wherein at least part of enterprise-related data is entered for each point of time over a sequential series of points in time preceding a specified valuation date.

49. The program storage device of claim 48, wherein the enterprise related data further comprise forecast event data and historical event data.

50. The program storage device of claim 49, wherein the enterprise related data further comprises transaction data.

51. The program storage device of claim 44 wherein said plurality of database management systems are obtained from the group consisting of advanced financial systems, basic financial systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, the Internet and combinations thereof.

52. The program storage device of claim 44, wherein the common schema further comprises a network model.

54. The method of claim 53, wherein the enterprise related data are aggregated in accordance with a common data dictionary that identifies a common set of attributes selected from the group consisting of category of value, component of value, element of value, currency, unit of measure and combinations thereof.

55. The method of claim 54, wherein one or more elements of value are selected from the group consisting of brands, customers, employees, production equipment, strategic partnerships, vendor relationships and combinations thereof.

56. The method of claim 53, wherein enterprise related data further comprises forecast event data and historical event data.

57. The method of claim 53, wherein the enterprise related data further comprises transaction data.

58. The method of claim 53, wherein said plurality of database management systems are obtained from the group consisting of advanced financial systems, basic financial systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, the Internet and combinations thereof.

59. The method of claim 53, wherein the common schema further comprises a network model.

66. The method of claim 65, the method further comprising:

using a common data dictionary to identify a common set of attributes in the enterprise related data from the plurality of database management systems, the attributes including at least one

of: component of value, currency, element of value, unit of measure, or a combination thereof; automatically aggregating the enterprise related data from the plurality of database management systems using the identified common set of attributes.

68. The computer readable medium of claim 67, wherein a common schema is defined by an application database schema.

69. The computer readable medium of claim 67, wherein a common schema further comprises a network schema.

70. The computer readable medium of claim 67, wherein a common schema contains a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

72. The system of claim 71, wherein a plurality of data sources further comprise a plurality of relational databases that use different data formats.

73. The system of claim 71, wherein an interface further comprises a network connection.

74. The system of claim 71, wherein a plurality of data sources further comprise database management systems for applications selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system, an intranet and combinations thereof.

75. The system of claim 71, wherein a common schema contains a common data dictionary that defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

76. The system of claim 71, wherein a conversion of data to a common schema further comprises an conversion of data that is completed automatically.

78. The method of claim 77, wherein a back-end interface further comprises a network connection.

79. The method of claim 77, wherein the method further comprises accessing, converting, integrating and storing data from an Internet.

80. The method of claim 77, wherein a common schema further comprises a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

81. The method of claim 77, wherein a plurality of enterprise transaction systems are selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system, an Intranet and combinations thereof.

10. Evidence Appendix

Pages 37 - 43	excerpt from Everest document first submitted August 17, 2006
Pages 44 - 46	declaration under Rule 132 first submitted November 5, 2007
Pages 47 – 50	pages returned to file wrapper on April 8, 2006
Pages 51 – 52	petition-response dated August 27, 2004
Page 53	page from November 30, 2007 Amendment/Reply
Page 54	page from reference first submitted November 20, 2007
Page 55	page from reference first submitted November 30, 2007
Pages 56 – 57	Notice of allowable subject matter from a November 21, 2000 Office Action
Page 58	Timeline of appeal for application 08/999,245
Page 59	37 CFR 1.193

DATABASE MANAGEMENT

Objectives, System Functions, and Administration

Gordon C. Everest

Graduate School of Management
University of Minnesota

McGraw-Hill Book Company

New York St. Louis San Francisco Auckland Bogotá Hamburg
Johannesburg London Madrid Mexico Montreal New Delhi
Panama Paris São Paulo Singapore Sydney Tokyo Toronto

CREDITS: Page 7: ANSI definitions, copyright © 1977 Computer and Business Equipment Manufacturers Association (CBEMA). Permission granted November 5, 1985; Pages 7 and 47: Definitions of "data" and "integrity" reprinted by permission of Simon and Schuster, Inc., © 1980 by Simon and Schuster, Inc.; Pages 10 and 11: Quotations from Hanold and DeWan reprinted with permission of *DATAMATION®* magazine, © 1972 by Technical Publishing Company, a Dun & Bradstreet Company, all rights reserved; Page 17: Figure 1-11, reprinted with permission of The Diebold Group, Inc.; Page 178: Figure 5-9, portion of MARK IV® File Definition Form reprinted by permission of Informatics General Corporation; Page 288: Figure 7-7, © 1971 Program Products, Inc., author unknown; Page 386: Figure 11-1, *Computerworld*, September 12, 1977, author unknown; Page 528: Figure 14-9, reprinted with permission of Dr. Larry G. Kersta; Page 559: *Time* magazine excerpts, copyright © 1978, 1982, 1984 Time Inc. All rights reserved. Reprinted by permission from TIME; Pages 625, 642, 643, 654, 681 and 764: Six cartoons by Jim Orton, reprinted with permission; Page 655: Figure 16-7, advertisement reprinted with permission of Aetna; Page 759: Figure 18-9, advertisement as it appeared in 1981, reprinted with permission of Britton-Lee; Page 772: Figure 18-12, reprinted with permission from Pergamon Press Ltd.

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DATABASE MANAGEMENT
Objectives, System Functions, and Administration

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An organization cannot simply acquire a DBMS, plug it in, and watch it run. *A DBMS by itself has no data*, no stored queries or report definitions, and no user application programs to act on that data. The organization must collect and store (or convert) data, must train users, and must develop report definitions and application processes to operate in the new database environment.

As DBMSs become less costly, more comprehensive in capabilities, easier to use, and available on smaller systems (minicomputers and microcomputers), the countervailing forces diminish. In spite of the cost of a DBMS, an organization's need may be so overwhelming that waiting any longer would be an expensive mistake—as it becomes increasingly expensive to develop new applications using obsolete tools and methods.

2.4 OBJECTIVES OF DATABASE MANAGEMENT*

Having considered the various factors which can motivate an organization to move toward the database approach and acquire a DBMS, what are the objectives to be accomplished with such a move? This section outlines the various objectives an organization my have in moving to the database approach.

Motivators are problems an organization faces while objectives are the desirable end results stemming from a solution to those problems. An expression of objectives serves to focus attention on the needs of the using environment and the system and administrative requirements for meeting those needs. Some objectives of database management derive directly from the assumed context of organizations and management information systems.

The proper management of any resource involves making it available for its intended purpose and controlling its use so as to maintain its integrity, ensuring that it is used as intended and that it will be available for future use. *Management* implies both control and use. Database management encompasses the control and use of data resources in an organization. *Control* involves maintaining the existence and quality of the database and restricting its use to authorized people. Control seeks to maintain database integrity. *Use* of data resources leads to the objective of availability, which includes sharing present data resources and enhancing future availability. The objectives of sharability, availability, evolvability, and integrity are related as shown in Figure 2-2.

2.4.1 Sharability

An ability to share data resources is a fundamental objective of database management. In its fullest interpretation, this means different people and different processes using the same actual data at virtually the same time.

*An earlier version of the material in this chapter appeared in *Information Systems: COINS-IV*, Proceedings of the Fourth International Symposium on Computer and Information Sciences, Miami Beach, Florida, 1972 December 14-16, edited by Julius T. Tou, New York: Plenum Press, 1974, pages 1-35. Portions reprinted with permission.

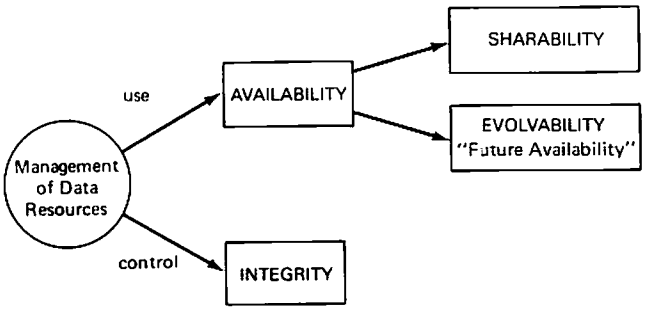

Figure 2-2. Objectives of Database Management.
The management of any resource involves both the use of that resource and the control of its use.

No person in an organization can act completely independently of everyone else in the organization. An organization brings together a variety of human talents to work together toward common goals. In working toward goals, people perform various operations and activities in varying degrees of cooperation or conflict. A database, whether or not it can be identified as a single physical entity, contains data relating to the primary and support operations of an organization. Sharing of data is a necessary first step toward a corporate database.

Since the data pertains to various aspects of the organization, it literally "belongs" to the whole organization and not to any one individual. A system which provides shared access to a corporate database is quite different from a typical time-sharing system where files are "owned" by individual users.* In organizations, shared files are the general rule and private files become the exception.

A shared database environment requires central control to coordinate the collection and use of data and to integrate the storage of data. This can result in increased consistency, reduced redundancy, and reduced effort in the capture and maintenance of data.

Rather far reaching ramifications stem from the stated objective of sharability:

- Serving different types of users with varying skill levels
- Handling different user views of the same stored data
- Combining interrelated data
- Setting standards
- Controlling concurrent updates so as to maintain data integrity
- Coordinating restart and recovery operations across multiple users

This list indicates some of the additional problems which arise in managing shared data. A central implication of sharing is that compromise will often be required be-

*The typical time-sharing system in university or scientific research environments permits sharing *time* on computer system resources. Time-sharing systems handle the private files of various participants in the environment. Each file has an owner, that is, a person who creates and maintains the file. Sometimes a person can use data with permission of the owner, or use data in a small "public file," which is usually read-only.

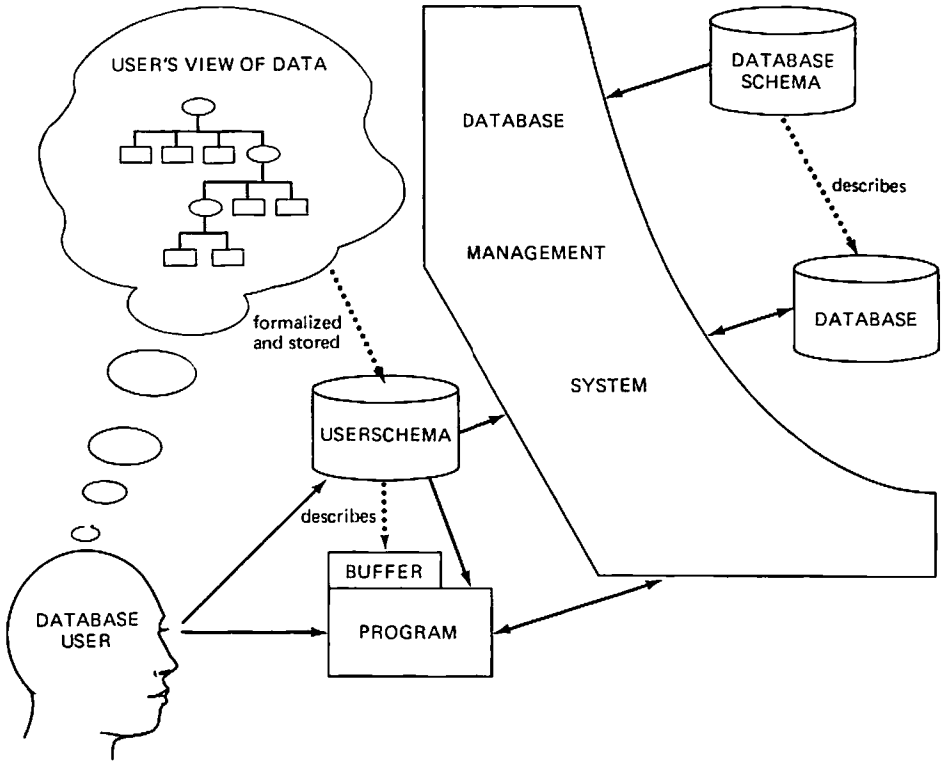

Figure 3-10. Userschema: Definition of a User's View of the Database.

Every user has some perception of the structure and content of the data being accessed at any given time. The userschema is a formal expression of the user's view of the database. It consists of:

- A logical data definition.
- Its physical representation in a program buffer, or on the screen or output page of a user's terminal.
- Its mapping to the data in the database.

The userschema may use different data names, reflect a different data structure, and refer to only portions of the database. The DBMS knows both the userschema and the database schema and can convert the data when transferred between the two according to the defined mapping. The userschema is the fundamental component of a DBMS architecture for achieving sharability and evolvability.

As before, if the change to the schema only has an efficiency impact, it may be desirable to continue to execute the program with a fully defined userschema, omitting the fact that it was a copy of the (old) schema. The system would operate normally, testing for incompatibilities and performing any required conversions and transformations. The less efficient execution would be an interim solution until the program could be rewritten as priority demands on the human resources would permit. Again, the central point is that the using organization has a choice, based purely on economic grounds—the cost of running inefficiently versus the cost of reprogramming in order to run more efficiently in the future.

11.4 DATA CONVERSION PROCESSES

A data conversion process takes data in one machine readable form and converts into another form. Data conversion takes place during database creation, update, and in the schema-userschema mapping discussed earlier in this chapter. These processes are all members of a family of data conversion processes.

Referring to Figure 11-9, a general data conversion process takes as *input*:

- Existing mechanized data (in a database, an external file or a program buffer) called "source" data for the conversion process.
- Its complete definition, which may be separate and explicit, may be buried in a special-purpose conversion program, or may be assumed in a general conversion program which expects the existing data to be in a prescribed format and structure.
- The definition of the new "target" data to be generated by the conversion process. The target data definition may be complete or it may be incremental to the source data definition. Also, the mapping between the two definitions may be completely implicit or partly explicit where the conversion process cannot infer the association.

The conversion process produces as *output*:

- A new collection of data (in a database, external file, or program buffer) which conforms to the target data definition.

11.4.1 The Family of Data Conversion Processes

The family of data conversion processes includes mechanization, creation, update, revision, reversion,* and the schema to userschema conversion. These functions are shown in Figure 11-10 as they relate within the family. For clarity, the source and target data definitions required of each conversion process are not shown.

In a DBMS it is highly desirable for data conversion to be performed by the same underlying modules in the database control system. The availability of rich data conversion facilities in each of the members of the family of conversion processes determine the degree of overall data independence exhibited in the system, thus contributing

*Also called file writing or file generation (see section 7.1.3).

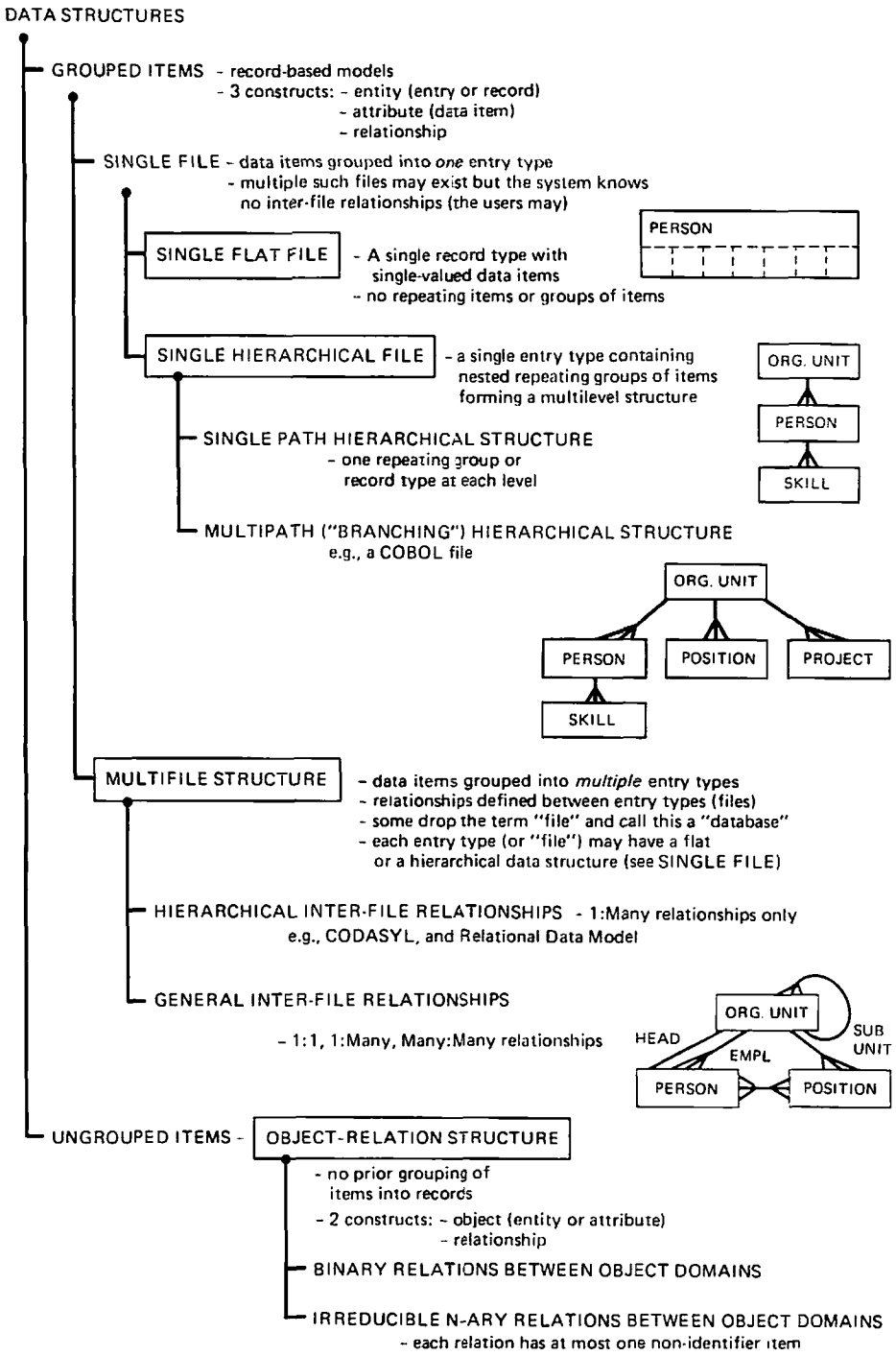

Figure 4-1. A Taxonomy of Data Structures.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. :	10/743,616
Applicant :	Jeff S. Eder
Filed :	22 December 2003
Art Unit :;	3692
Examiner :	Jennifer Liversedge
Docket No. :	AR - 61
Customer No. :	53787

DECLARATION UNDER RULE 132

I, Dr. Peter Brous, do hereby declare and say:

My home address is 17221 NE 8th Street, Bellevue, WA 98008. I have a B.S. degree in Finance from the University of Connecticut and a PhD in Finance from the University of Oregon.

I have worked in the finance field for 25 years, concentrating in the areas of corporate performance measures, business valuation, capital budgeting, and real option analysis. I have been a professor of finance at Albers School of Business and Economics at Seattle University for 15 years and was recently honored to hold the Dr. Khalil Dibee Endowed Chair.

I further declare that I do not have any direct affiliation with the application owner, Asset Reliance, Inc or its licensee Knacta, Inc. I met the inventor, the President of Knacta, Inc.,

for the first time on October 16, 2007. I understand that Knacta, Inc. has a license to the intellectual property associated with this application. I have had extremeley brief discussion of this patent application and the article cited below with the inventor.

On October 25, 2007 I was given a copy of "How to sort out the premium drivers of post deal value", by Daniel Bielinski published in Mergers and Acquisitions in July of 1993. Until that time I had not read the article. However, I have read many articles on the subject of Value Based Management. I have a strong understanding of the concept and practice of Value Based Management and have been teaching this concept for over 10 years. I have studied the entire article and I am totally familiar with the language of the article with the scope thereof.

Based on my experience and education in the field of finance, I have concluded that the the Bielinski article and Value Based Management does not inherently describe or enable: the development of a computational model of enterprise market value by element of value and segment of value where the elements of value are selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual capital, intellectual property, partnerships, processes, production equipment, vendors and vendor relationships and the segments of value are selected from the group consisting of market sentiment, real option, derivative, excess financial asset.

There are several reasons for this:

1. As stated in the article VBM is similar to SVA. One of the ways it is similar is that it focuses on "value drivers" such as profit margin and growth instead of intangible assets as part of a tree based analysis of cash flow. Unlike SVA, VBM includes operational value drivers that drive the value drivers. However, these are generally not intangible elements of value. For example, Bielinski provides an example of breaking down profit margin by looking more closely at the cost of materials;

2. VBM is also similar to SVA in that it relies on the efficient market theory and this precludes the analysis of market sentiment;

3. SVA and VBM are tools that focus on the standard valuation model, a discounted cash flow model, that does not even consider the value associated with flexibility or decision making that is done sequentially and conditionally based on the arrival of new information. The valuation of this flexibility is the basis for valuation using real option analysis; and

4. Neither VBM or SVA address the valuation of derivatives.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Signed,

Dr. Peter Brous
Date: 10/31/2007

Phone calls were made. Attorney was unable to be contacted

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SEARCHED

Class	Sub.	Date	Exmr.
705	1, 7	11/11/03	KP
707	10 100-194		

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

SEARCH NOTES

	Date	Exmr.

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TYPIST		71417	9/10/98
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FILE MAINT.			
DRAFTING			

INDEX OF CLAIMS

Claim Final	Claim Original	Date 11/16/00							
	1	✓							
	2	✓							
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SYMBOLS

✓	Rejected
=	Allowed
. (Through numeral)	Canceled
+	Restricted
N	Non-elected
I	Interference
A	Appeal
O	Objected

Claim Final	Claim Original	Date							
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12/10/97

PATENT APPLICATION

08999245

APPROVED FOR LICENSE ☐

INITIALS _____

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Date Entered or Counted			Date Received or Mailed
	1.	Application _____ papers.	
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	3.	~~Petition~~ Request Letter	~~11/4/98~~ 9/5/98
	4.	Missing Parts complete	11/4/98
	5.	Ltr & re-submitted Drawings	July 12, 1999
	6.	Rec. P/Atty	9/27/99
	7.	Copies P/Atty	9/29/99
	8.	Power To Inspect	9/29/99
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	10.	Response to Restriction	9-5-00 9-1-00 cjm
11-20	11.	Rej (3 mos)	11-21-00
	12.	Relocation	3/16/07
	13.	Notice Sabandoned	12/7/07
	14.	Letter Re Notice of Abandonment	12-14-07
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TECHNOLOGY CENTER 3600

Jeffrey S. Eder
19108 30th Drive SE
Mill Creek, WA 98012

In re Application of :
Jeffrey S. Eder :
Application No. 08/999,245 :
Filed: December 10, 1997 :
For: A METHOD OF AND A SYSTEM FOR DEFINING AND VALUING ELEMENTS OF A BUSINESS ENTERPRISE

DECISION ON PETITION TO WITHDRAW THE HOLDING OF ABANDONMENT

This is in response to applicant's letter of December 14, 2001 requesting a copy of the Office action mailed on November 21,2000. This letter is being construed as a petition to withdraw the holding of abandonment under 37 CFR 1.181. The delay is considering this petition is sincerely regretted.

The petition is **GRANTED**.

A review of the file record indicates that this application was held abandoned on December 7, 2001 for failure to respond to the Office action within the statutory period of three months from the mailing date of November 21, 2000.

Applicant submits that the Office action was never received.

A review of the file reveals that a Revocation and Substitute Power of Attorney was filed September 5, 2000 and was entered into the file wrapper. However, it appears the papers were never processed and entered into the USPTO database. Thus, the Office action was not mailed to the new attorney of record, Todd M. Becker of Davis, Wright, Tremaine, LLP at the firm's address of 2600 Century Square, 1501 Fourth Avenue, Seattle, Washington 98101-1688. Subsequently, applicant filed another Revocation of Power of Attorney on March 16, 2001 that revoked all previous powers and returned power to applicant. This document was processed and a Notice to that effect was mailed on March 22, 2001, but the Office action of November 21, 2000 had been previously sent to the incorrect address and was never provided to applicant.

The application is being forwarded to the Supervisory Legal Instruments Examiner with instructions to withdraw the holding of abandonment and restore the application to pending status before re-dating and re-mailing the Office action to the updated correspondence address.

Randolph A. Reese
Special Programs Examiner
Technology Center 3600
(703) 308-2121

RAR: 8/25/04

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Results of Search in US Patent Collection db for:
ACLM/"neural network": 3334 patents.
*Hits **1** through **50** out of **3334***

Next 50 Hits

Jump To

Refine Search aclm/"neural network"

	PAT. NO.	Title
1	7,302,339	Hazard countermeasure system and method for vehicles
2	7,302,229	Enabling desired wireless connectivity in a high frequency wireless local area network
3	7,302,102	System and method for dynamically switching quality settings of a codec to maintain a target data rate
4	7,302,089	Autonomous optical wake-up intelligent sensor circuit
5	7,301,093	System and method that facilitates customizing media
6	7,299,214	System for predictive analysis of time series data flows
7	7,299,123	Method and device for estimating the inlet air flow in a combustion chamber of a cylinder of an internal combustion engine
8	7,298,823	Method and device for user-specific parameterization of an x-ray device
9	7,297,129	Bed-side information system
10	7,296,734	Systems and methods for scoring bank customers direct deposit account transaction activity to match financial behavior to specific acquisition, performance and risk events defined by the bank using a decision tree and stochastic process
11	7,296,012	Method of and apparatus for multimedia processing, and computer product
12	7,296,009	Search system
13	7,296,007	Real time context learning by software agents
14	7,296,006	Method of inferring rotorcraft gross weight
15	7,295,977	Extracting classifying data in music from an audio bitstream
16	7,295,961	Method for generating a circuit model
17	7,295,867	Signal processing for measurement of physiological analytes

Proceedings of the First International Conference on Machine Learning and Cybernetics, Beijing, 4-5 November 2002

BP NEURAL NETWORK OPTIMIZATION BASED ON AN IMPROVED GENETIC ALGORITHM

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Abstract:

An improved Genetic Algorithm based on Evolutionarily Stable Strategy is proposed to optimize the initial weights of BP network in this paper. The improvement of GA lies in the introducing of a new mutation operator under control of a stable factor, which is found to be a very simple and effective searching operator. The experimental results in BP neural network optimization show that this algorithm can effectively avoid BP network converging to local optimum. It is found by comparison that the improved genetic algorithm can almost avoid the trap of local optimum and effectively improve the convergent speed.

Keywords:

Evolutionarily stable strategy; Genetic algorithm; Neural network; Back propagation (BP) algorithm; Premature convergence

1 Introduction

In recent years, there have been many attempts in designing artificial neural networks automatically, in which the combination of evolutionary algorithms and neural networks has attracted a great deal of attention and one kind of evolutionary artificial neural network has been formed. Evolving neural networks by genetic algorithm were researched earliest of all.

The efficiency of GA has great influences on BP neural network (BPNN) optimization. During application of GA, however, there often exists a problem of premature convergence and stagnation [1]. Whitley think that selective pressure and selection noise are the main factors of affecting population diversity [2]. Higher selective pressure often leads to the loss of diversity in the population, which causes premature convergence at the same time of improving convergent speed. Therefore, keeping the balance between population diversity and convergent speed is very important to the performance of GA.

In recent years, many diversity preservation methods have been developed to avoid premature convergence to a local optimum. These can be divided into the following three subclasses:

1)Schemes of alleviating selective pressure to keep the biologic diversity, such as the modification of selection operator [3-5] and scale-transformation of fit function [6]. Unfortunately, these methods often cause another problem of slow rate of convergence or stagnation in searching global optimum at the same time of improving population diversity.

2)Non-static mutation rate control schemes including dynamic [7-10], adaptive or self-adaptive [10-12] mechanism to control the rate of mutation. The mutation operator is a main operator to keep the biologic diversity, especially in real-coded GA, because it introduces new search space and maintain the genetic diversity of a population, whereas the crossover operator only operates in the known search space. From this point of view, high mutation rate is good for searching the global solution. But too high mutation rate will result in blind stochastic search. It has been proved that deterministically varying mutation rates during the search have a better performance compared to the fixed mutation rate schemes. Unfortunately, there are some drawbacks in non-static mutation rate control schemes. The dynamic parameter control scheme requires for the user to devise a schedule specifying the rate at which the parameter is typically decreased. The self-adaptive scheme does not need such a specific schedule. Unfortunately it is rather complicated to explain to novice users, and as a result they usually prefer the simple fixed mutation rate scheme.

3)Spatial separation schemes [13-14]. One of the most important representatives is the distributed GA's (DGA's). Their premise lies in partitioning the population into several subpopulations, each one of them being processed by a GA independently of the others. Furthermore, a migration mechanism produces a chromosome exchange between the subpopulations. In this way, a distributed search and an effective local tuning may be obtained simultaneously. They are suitable for producing multi-resolution in search space but run risk of running too much CPU time.

A genetic algorithm based on evolutionarily stable strategy (ESSGA) is proposed in this paper to try to pursue better balance between population diversity and convergent speed by means of introducing a new kind of mutation operator under the control of a stable factor. Different from other mutation rate control schemes, this mutation operator only acts on some of the preponderant individuals under the control of a stable factor, which keeps the ratio of quantity

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(12) **United States Patent**
Singh et al.

(10) **Patent No.: US 7,251,582 B2**
(45) **Date of Patent: Jul. 31, 2007**

(54) **FAULT DIAGNOSIS**

(75) Inventors: **Ritindar Singh**, Cranfield (GB); **Suresh Sampath**, Cranfield (GB)

(73) Assignee: **Rolls-Royce, PLC**, London (GB)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 518 days.

(21) Appl. No.: **10/752,537**

(22) Filed: **Jan. 8, 2004**

(65) **Prior Publication Data**

US 2004/0216004 A1 Oct. 28, 2004

(30) **Foreign Application Priority Data**

Jan. 24, 2003 (GB) 0301707.6

(51) **Int. Cl.**
G06F 9/00 (2006.01)

(52) **U.S. Cl.** **702/183**; 702/185; 714/25

(58) **Field of Classification Search** 702/123, 702/179, 182, 183, 185, 186, 188; 705/7, 705/8; 706/13, 45; 714/48, 10, 25; 703/14
See application file for complete search history.

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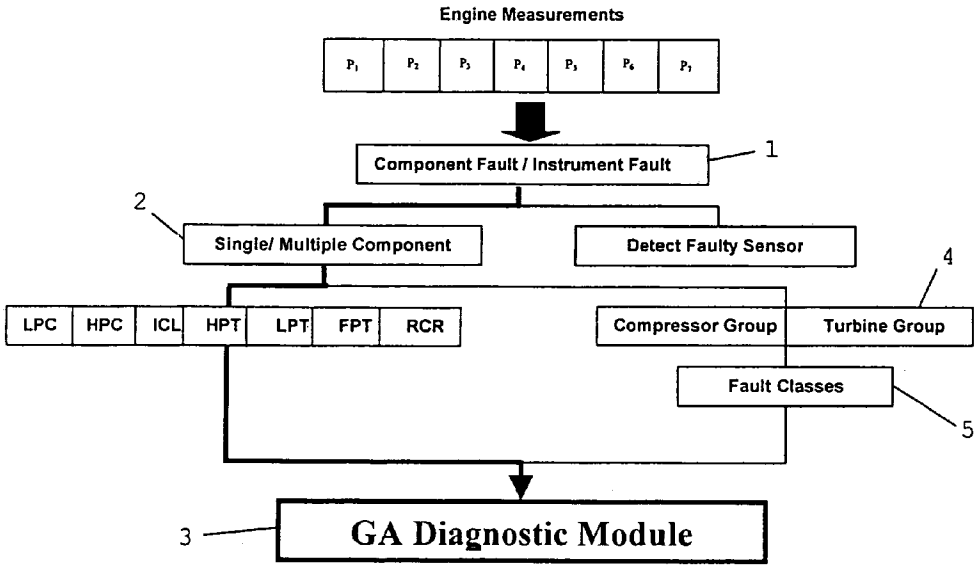
(Continued)

Primary Examiner—John Barlow
Assistant Examiner—John Le
(74) *Attorney, Agent, or Firm*—Oliff & Berridge, PLC

(57) **ABSTRACT**

Methods for estimating performance of and/or detecting faults in components of a multi-component system, where the performance of each component is defined by one or more performance parameters x related to measurement parameters z that can be expressed as a function of the performance and operating parameters defining an operating condition of the system. The methods include: defining a series of fault classes corresponding to possible outcomes of faulty components; creating an initial population of strings for each fault class, each including a plurality of elements corresponding to the performance and operating parameters, values being assigned to the string elements which represent estimated values of said parameters and are constrained only to indicate fault affected values for performance parameters of the fault affected component of the respective class; and optimising an objective function which gives a measure of the consistency between measured and calculated values of the measurement parameters.

14 Claims, 8 Drawing Sheets



No physical transformation is performed, no practical application is found. The claims appear to recite mathematical algorithms divorced from a practical application in the technological arts. The claims merely perform mathematical calculations in an expected manner as the machine is designed to do for any type of algorithm calculations, and present data results, add nothing more structurally or functionally than material falling under the non-statutory abstract idea concepts.

Allowable subject

5. As per claim 25, the prior art taken alone or in combination fails to teach or suggest for each value driver, multiplying each of the three numbers for capitalized value of future revenue, expenses, and changes in capital by the corresponding correlation percentage to yield a revenue value, an expense valued and a capital value taken in combination with a computer-implemented method for valuing one or more elements of a business enterprise on a specified valuation date.

As per claim 38, the prior art taken alone or in combination fails to teach or suggest calculating the value of a growth option using an option pricing algorithm taken in combination with a computer-implemented method for valuing one or more growth options of a business enterprise on a specified valuation date.

As per claim 39, the prior art taken alone or in combination fails to teach or suggest combining results from step © and (d) in the copywritten Value Map format for display and optional printout taken in combination with a computer-implemented method of preparing a Value Map for a business enterprise on a specified valuation date.

As per claim 40, the prior art taken alone or in combination fails to teach or suggest an element valuation processor for calculating the value of each element by multiplying the capitalized values of future revenue, expenses and changes in capital by the correlation percentages and then summing the three resulting figures to yield the value of the element on the valuation taken in combination with a c system for valuing one or more elements of a business enterprise on a specified valuation date.

6.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frantzy Poinvil, whose telephone number is (703) 305-9779. The examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:00 PM.
The fax phone number for this Art Unit is (703) 305-0040.
Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.
20Nov00

FPoinvil

Frantzy Poinvil
Primary Examiner
Art Unit 2164

Timeline of 08/999,245 appeal

April 1, 2007	Notice of appeal filed in accordance with 35 USC 134(b).
June 1, 2007	Appeal brief filed.
September 10, 2007	Prosecution re-opened on basis of an apparent material misrepresentation that a new reference (Everest) had been identified. Everest had been disclosed on August 17, 2006.
November 30, 2007	Amendment/Reply filed in response to September 10, 2007 Office Action filed with amendments to claims 44, 47, 53, 65, 67, 71 and 77.
December 3, 2007	Notice of appeal re-filed in accordance with 35 USC 134(b). (Please note: the Appellant is aware that 37 CFR 1.193 used to prohibit re-establishing an appeal after claims were amended, however, as shown on the next page, this rule is no longer in effect).
February 3, 2008	New appeal brief filed.
April 28, 2008	Notice of non-compliant appeal brief filed questioning the inclusion of a declaration provided under MPEP 2001.06(b), questioning the inclusion of amended claims and questioning the identify of the amended claims.
May 5, 2008	Appeal brief re-filed. Text included explanation of declaration (it was provided under MPEP 2001.06(b)), a reminder that the Examiner had previously reviewed similar claims and highlighting the identify of the amended claims.
June 6, 2008	Supplemental appeal brief filed. The supplemental brief removed the amended claims from the list of claims being appealed and listed the claims that were being appealed on the cover page.
August 8, 2008	Notice of non-compliant appeal brief filed questioning the identity of the claims being appealed.
September 5, 2008	Supplemental appeal brief re-filed. The supplemental brief lists the claims that are being appealed on the cover page, removed claims not being appealed from the claims appendix and notes that in accordance with 37 CFR 41.37 a concise explanation of the subject matter defined in each of the independent claims has been included even though these claims were not being appealed.

browse before

§ 1.193 [Reserved] - Patent Rules

§ 1.193 [Reserved]

[24 FR 10332, Dec. 22, 1959; 34 FR 18858, Nov.26, 1969; para. (c), 47 FR 21752, May 19, 1982, added effective July 1, 1982; para. (b), 50 FR 9382, Mar. 7, 1985, effective May 8, 1985; 53 FR 23735, June 23, 1988, effective Sept. 12, 1988; para. (c) deleted, 57 FR 2021, Jan. 17, 1992, effective Mar. 16, 1992; para. (b) revised, 58 FR 54504, Oct. 22, 1993, effective Jan. 3, 1994; revised, 62 FR 53131, Oct. 10, 1997, effective Dec. 1, 1997; para. (b)(1) revised, 65 FR 54604, Sept. 8, 2000, effective Nov. 7, 2000; para. (a)(1) revised, 68 FR 14332, Mar. 25, 2003, effective May 1, 2003; removed and reserved, 69 FR 49959, Aug. 12, 2004, effective Sept. 13, 2004]

browse after

11. Related Proceedings Appendix: 09/761,671 – opinion appears to be based largely on an assumption that VBM is different than SVA in a number of areas where they are in fact the same (see Evidence Appendix, pages 44 – 46). Opinion also appears to contain a number of clear errors because:

1) The cited combination failed to teach one or more limitation for every claim.

2) The cited documents failed to make the invention as a whole obvious by teaching away from the claimed methods. Bielinski teaches: efficient market in place of an inefficient market, a tree based analysis in place of a network analysis and three determinants of market value (cash flow, cash flow risk and growth) in place of the elements of value as determinants of value. Brown teaches: scoring in place of regression and that 40 external factors determine market value in place of elements of value as determinants of value.

3) Modifying the cited documents to replicate the claimed functionality would require changes in the principles of operation for the cited inventions and destroy their ability to function. Bielinski would have to change from a tree to a network and it is well known that substituting a neural network sigmoid in place of the tree node would destroy its ability to function. Brown would have to change to using elements of value as determinants of value and use regression in place of scoring.

4) The cited documents teach away from their own combination. Bielinski specifically prohibits the use of projections while the cited portion of Brown teaches a method with only one function: projecting changes in stock prices.

5) Bielinski specifically states that the disclosed VBM method follows the principles of Shareholder Value Analysis (SVA). One of the well known principles of SVA is the efficient market theory. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the efficient market theory.

6) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is the tree based analysis of cash flow. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the tree based analysis of cash flow.

7) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is that there are 3 determinants of market value. In spite of these facts, the BPAI said there was no evidence that Bielinski taught that there were 3 determinants of market value.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEFFREY SCOTT EDER

Appeal 2007-2745
Application 09/761,671
Technology Center 3600

Decided: August 29, 2007

Before TERRY J. OWENS, HUBERT C. LORIN, and ANTON W. FETTING, *Administrative Patent Judges.*

FETTING, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Jeffrey Scott Eder (Appellant) seeks review under 35 U.S.C. § 134 of a Final rejection of claims 69-103, the only claims pending in the application on appeal.

We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6.

We AFFIRM.

The Appellant invented a way to calculate and display a forecast of the impact of user-specified or system generated changes in business value drivers on the other value drivers, the elements, the components, the financial performance and the long term value of a commercial enterprise that utilizes the information from a detailed valuation of the enterprise (Specification 9:2-7).

An understanding of the invention can be derived from a reading of exemplary claim 69, which is reproduced below [bracketed matter and some paragraphing added].

69. A current operation modeling method, comprising:

[1]

[a] integrating transaction data

[i] for a commercial enterprise

[ii] in accordance with a common data dictionary;

[b] using a neural network model

[i] to identify one or more value driver candidates

[ii] for each of one or more elements of value from said data,

[c] using an induction model

[i] to identify one or more value drivers from said candidates and

[ii] define a contribution summary

[1] for each element of value

[2] for each of one or more aspects of a current operation financial performance

[3] using said value drivers, and

[d] creating a plurality of network models

[i] that connect the elements of value

[ii] to aspects of current operation financial performance

[iii] using said contribution summaries

[2]

[a] where the elements of value are selected from the group consisting of

[i] brands,

[ii] customers,

[iii] employees,

[iv] intellectual capital,

[v] partners,

[vi] vendors,

[vii] vendor relationships and

[viii] combinations thereof,

[b] where the induction models are selected from the group consisting of

[i] lagrange,

[ii] path analysis and

[iii] entropy minimization,

[c] where the network models support automated analysis through computational techniques and

[d] where the aspects of current operation financial performance are selected from the group consisting of

[i] revenue,

[ii] expense,

[iii] capital change,

[iv] cash flow,

[v] future value,

[vi] value and

[vii] combinations thereof.

This appeal arises from the Examiner's Final Rejection, mailed June 13, 2006. The Appellant filed an Appeal Brief in support of the appeal on October 3, 2006. An Examiner's Answer to the Appeal Brief was mailed on January 9, 2007. A Reply Brief was filed on January 27, 2007.

PRIOR ART

The Examiner relies upon the following prior art:

Daniel W. Bielinski, *How to sort out the premium drivers of post-deal value*, Mergers and Acquisitions, Jul/Aug 1993, Vol. 28, Iss. 1, pg. 33, 5 pgs. (Bielinski)

Carol E. Brown, James Coakley, and Mary Ellen Phillips, *Neural networks enter the world of management accounting*, Management Accounting, May 1995, Vol. 76, Iss. 11, p. 51, 5 pgs. (Brown)

The Appellant relies upon the following prior art, already of record:

Alfred Rappaport, *Creating Shareholder Value*, A Guide for Managers and Investors, pp. 39, 70, 171, and 172, ISBN 0-684-84410-9, 1998 (Rappaport)

REJECTION

Claims 69-103 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Bielinski and Brown.

ISSUES

Thus, the issue pertinent to this appeal is whether the Appellant has sustained its burden of showing that the Examiner erred in rejecting claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over Bielinski and Brown.

FACTS PERTINENT TO THE ISSUES

The following enumerated Findings of Fact (FF) are believed to be supported by a preponderance of the evidence.

Claim Construction

01. Entropy minimization is an induction algorithm that, starting with nothing, adds variable to composite variable formula as long as they increase the explainability [sic] of result (Specification, 47:Table 23).

02. LaGrange is an induction algorithm that is designed to identify the behavior of dynamic systems and uses linear regression of the time derivatives of the system variables (Specification, 47:Table 23).

03. Path Analysis is an induction algorithm that is essentially equivalent to multiple linear regression that finds the least squares rule for more than one predictor variable (Specification, 47:Table 23).

Bielinski

04. Bielinski is directed towards describing how Value Based Management (VBM), an advancement in discounted cash flow modeling, centers on what specific steps can be taken operationally and strategically to add value to a target organization (Bielinski, 1:Abstract).

05. Bielinski describes how sensitivity analysis of past results offers clues to what can be done in the future and which value drivers should receive the most attention to achieve optimal rewards. The VBM technique allows the analyst to figure key decision making trade-offs, since attention to one driver may generate negative effects on others or 2 or

more drivers may have to be varied in concert to produce the best results (Bielinski, 1:Abstract).

06. Bielinski describes Value-Based Management (VBM), which keys on a target's historical operations rather than future projections. VBM also can calculate the results of trade-offs when decision makers must choose between a series of factors that can be changed to enhance post acquisition value (Bielinski, 1:Bottom ¶ - 2:Top line).

07. Bielinski describes the best-known valuation tool designed to facilitate value creation and cash flow enhancement as Shareholder Value Analysis (SVA), introduced in the 1980s by Prof. Alfred Rappaport of Northwestern University (Bielinski, 2:First full ¶).

08. SVA may be defined as a two-step process. First, a discounted cash flow business valuation is performed. A projection of future cash flow (including a residual) is developed and discounted at an appropriate rate, usually the cost of capital, to arrive at an indicated value. Second, key factors (or value drivers), such as growth, profit margins, etc., are varied systematically to test the sensitivity of the indicated business value to each driver. Standard SVA sensitivity analysis changes each value driver plus or minus 1%, although analysts now often use "relevant ranges" and different percentages for upside and downside swings to reflect prevailing business realities (Bielinski, 2:First full ¶).

09. SVA has limitations often magnified into constraints that necessitate modifying standard SVA analysis. Thus, Rappaport describes and distinguishes VBM, a first cousin to SVA, which has resulted from these modifications. Bielinski provides an abbreviated overview of VBM and

describes how it differs from the traditional SVA framework (Bielinski, 2:Second and third full ¶'s).

10. Rather than use projections of future cash flow like SVA, the VBM framework utilizes historical cash flow. Five years of historical cash flow are added up to arrive at a cumulative baseline cash flow number. That is in contrast to SVA's method of discounting future cash flows to reach an indicated value. Instead of testing the sensitivity of a value based on a projection, VBM tests the sensitivity of the historical cash flow. VBM tells the executive how much more or less cash flow would be in the bank today if certain events had occurred differently or if the company had operated differently in the past five years (Bielinski, 2:Fifth and sixth full ¶'s).

11. The use of actual historical data, rather than projections, has proven useful in testing the impact of alternative scenarios against the reality of actual events. It also has served as a catalyst to identify and implement actions that generate improvements. As long as a company's fundamental structure does not change going forward, the results provide meaningful insight regarding the probable outcomes of future strategic action, to the extent that risk is not increased, an executive may reasonably assume that an increase from historical cash flow trends likely would translate into enhanced value (Bielinski, 2:Seventh full ¶).

12. VBM utilizes drivers that are more directly linked to operations. For example, rather than use operating profit margin as a broad value driver, a VBM analysis on a manufacturer would include a breakdown of cost of goods sold by key components (Bielinski, 2:Eighth full ¶).

13. Bielinski provides an example of a mix for VRM analysis including materials, human resources, technology and capital, and other costs of goods sold as value drivers (Bielinski, 2:Bottom five full ¶'s).

14. VBM essentially utilizes SVA principles but advances the basic techniques by incorporating historical data, operations-linked value drivers, and concurrent changes in multiple value-drivers (Bielinski, 3:Third full ¶).

15. Bielinski shows the sensitivity of the baseline cash flow to changes in key factors. Showing how results might have turned out differently if operating or strategic changes been effected in the recent past suggests improvements that can be made in the future (Bielinski, 3:Sixth full ¶).

16. Sensitivity analysis can show how changes in key cost and operating components can impact cash flow. One striking conclusion is that the areas where the big dollars are do not always offer the greatest opportunities to improve cash flow and value (Bielinski, 3:Seventh and eighth full ¶).

17. Bielinski describes how SVA can tie strategic changes directly to manufacturing by future initiatives to control costs, eliminating overspecification and establishing better value chain management (Bielinski, 3:Bottom ¶).

18. And if both the acquirer and target utilize VBM in constructing a projection, the two sides might come close to reaching a consensus on what constitutes a "realistic" projection of future performance (Bielinski, 4:Bottom ¶).

19. With VBM, sensitivity analysis of past results offers clues to what can be done in the future and which value drives - e.g., sales growth, profit margins, productivity, etc. - should receive the most attention to achieve the optimal rewards. Additionally, the VBM technique allows the analyst to figure key decision making trade-offs, since attention to one driver may generate negative effects on others or two or more drivers may have to be varied in concert to produce the best results (Bielinski, 5:Keys to creating value).

Brown

20. Brown is an accounting journal article describing how artificial intelligence (AI) is implemented in business practices. Three of the most common methods parallel the way people reason: rules (inference procedures), cases (case-based reasoning), and pattern matching (neural networks). These methods may be used separately or in combination and currently are being used to solve a variety of business tasks (Brown 51:Left col., Bottom ¶ - Center col.).

21. Neural networks use pattern matching. The financial services industry with its large databases has fielded several successful neural network applications, and neural networks based on information about customers or potential customers have proved effective. If large databases exist with which to train a neural network, then use of that technology should be considered. For a neural network the large database can be used as the equivalent of the human expert (Brown 52:Center col., Second ¶).

22. Neural networks are used for forecasting future sales and prices, estimating future costs, and planning future schedules and expenditures (Brown 53:Left col., Forecasting and Scheduling).

23. An air carrier's improved scheduling makes aircraft operations more predictable, reduces delays, and reduces fuel costs by shortening the time aircraft spend waiting for available gates. More efficient scheduling raises the number of flights by each aircraft, increases revenue, provides better management of disruptions, and improves passenger service (Brown 53:Left col.-middle col., Forecasting and Scheduling).

24. A provider of hospital supplies, uses a neural network to identify the key characteristics of the best customers and searches the inactive customer list for the highest probability purchasers from those who are inactive. Neural networks also help with customer service and support (Brown 53:Center col., First full ¶).

25. As businesses reorganize based on customer needs, neural networks can help them analyze past business transactions so they can understand their customers' buying patterns. One neural network for database mining has been tailored for database marketing (Brown 53:Center col., Second full ¶).

26. Many systems also have been developed to help investors and investment companies manage investments in securities. One company has a neural network it uses as a decision aid in stock purchases for mutual funds. The neural network makes a very accurate forecast about 10% of the time; the other 90% of the time it makes no forecast at all. Another company uses a neural network to manage the $100 million

equity portfolio of its pension fund. Forty indicators are used to rank the expected future returns of 1,000 equities. Currently owned stocks are sold and are replaced by those with future return rating over a certain cutoff, which results in an 80% monthly turnover. The portfolio return, net of transaction costs, exceeds that of the Standard & Poor's 500 index. Other firms use neural network to predict the S & P 500 index and the performance of stocks and bonds to help market traders in making their buy, hold, and sell decisions. The system recognizes patterns in market activity before they are apparent to a human, which may mean millions in trading profits (Brown 56:Center col., Investments).

Rappaport

27. Rappaport describes techniques for creating shareholder value (Rappaport Title).

28. A component of the cost of equity is a risk premium. One way of estimating the risk premium for a particular stock is by computing the product of the market risk premium for equity (the excess of the expected rate of return on a representative market index such as the Standard & Poor's 500 stock index over the risk-free rate) and the individual security's systematic risk, as measured by its beta coefficient (Rappaport 39:Middle full ¶).

29. Rappaport teaches that three factors determine stock prices: cash flows, a long-term forecast of these cash flows, and the cost of capital or discount rate that reflects the relative risk of a company's cash flows. The present value of a company's future cash flows, not its quarterly earnings, determines its stock price (Rappaport 70:Last full ¶).

30. Rappaport teaches that business value depends on seven financial value drivers: sales growth, operating profit margin, incremental fixed capital investment, incremental working capital investment, cash tax rate, cost of capital, and value growth duration. While these drivers are critical in determining the value of any business, they are too broad to be useful for many operating decisions. To be useful, operating managers must establish for each business the micro value drivers that influence the seven financial or macro value drivers.

31. Rappaport teaches that an assessment of these micro value drivers at the business unit level allows management to focus on those activities that maximize value and to eliminate costly investment of resources in activities that provide marginal or no potential for creating value. Value driver analysis is a critical step in the search for strategic initiatives with the highest value-creation leverage. Isolating these key micro value drivers enables management to target business unit operations that have the most significant value impact and those most easily controlled by management.

32. Rappaport teaches that the first step of a value driver analysis is to develop a value driver "map" of the business. This involves identifying the micro value drivers that impact sales growth, operating profit margins, and investment requirements. Armed with a better understanding of micro value driver relationships, the next step is to identify the drivers that have the greatest impact on value.

33. Rappaport provides an illustrative table (Rappaport 172:Figure 9-3. Micro and Macro Value Drivers) that presents the sensitivity of

shareholder value to changes in selected drivers for retail as well as industrial marketing (Rappaport 172:Top ¶).

34. Rappaport teaches that most managers believe they can identify the key drivers for their business. However, these drivers may in many cases be appropriate for a short-term-earnings-driven business rather than an organization searching for long-term value, Experience shows that value driver sensitivities are not always obvious. Therefore, quantifying sensitivities is a valuable exercise for both operating and senior management (Rappaport 172:First full ¶).

PRINCIPLES OF LAW

Claim Construction

During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the specification. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550 (CCPA 1969); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364, (Fed. Cir. 2004).

Although a patent applicant is entitled to be his or her own lexicographer of patent claim terms, in *ex parte* prosecution it must be within limits. *In re Corr*, 347 F.2d 578, 580, 146 USPQ 69, 70 (CCPA 1965). The applicant must do so by placing such definitions in the Specification with sufficient clarity to provide a person of ordinary skill in the art with clear and precise notice of the meaning that is to be construed. *See also In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) (although an inventor is free to define the specific terms used to describe the invention, this must be done with reasonable clarity, deliberateness, and precision; where an inventor chooses to give terms uncommon meanings, the inventor must set out any uncommon definition in some manner

within the patent disclosure so as to give one of ordinary skill in the art notice of the change).

Obviousness

A claimed invention is unpatentable if the differences between it and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (2000); *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 13-14, 148 USPQ 459, 466 (1966).

In *Graham*, the Court held that that the obviousness analysis is bottomed on several basic factual inquiries: "[(1)] the scope and content of the prior art are to be determined; [(2)] differences between the prior art and the claims at issue are to be ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved." 383 U.S. at 17, 148 USPQ at 467. *See also KSR Int'l v. Teleflex Inc.*, 127 S.Ct. at 1734, 82 USPQ2d at 1391. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* 127 S.Ct. at 1739, 82 USPQ2d at 1395.

"When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or in a different one. If a person of ordinary skill in the art can implement a predictable variation, § 103 likely bars its patentability." *Id.* 127 S. Ct. at 1740, USPQ2d at 1396.

"For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve

similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id.*

"Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." 127 S. Ct. at 1742, USPQ2d at 1397.

ANALYSIS

Claims 69-103 rejected under 35 U.S.C. § 103(a) as unpatentable over Bielinski and Brown.

The Appellant argues these claims as a group. Although the Appellant nominally contends each of the independent claims individually, each of the contentions for the remaining independent claims refers back to the arguments for claim 69.

Accordingly, we select claim 69 as representative of the group. 37 C.F.R. § 41.37(c(1)(vii) (2006).

We initially construe claim 69. We find that claim 69 is divided into two parts, [1] and [2]. Part [1] recites the method steps, which, overall perform element [1.a] integrating data, by step [1.b] using a neural network model to identify a fist set of candidates, from which step [1.c] further identifies a set of drivers, and defines a set of contribution summaries, finally, in step [1.d] creating network models with the summaries. Thus, claim 69 contains three steps, [1.b-d] that are employed within step [1.a]. Steps [1.b-d] are necessarily sequential because each of [1.c] and [1.d] requires output from the preceding step. Part [2] identifies components used

in the steps in part [1], and thus limits the terms those components are used in within part [1].

The Examiner found that Bielinski describes all of the elements of claim 69 except for the use of neural network models using the indicators and a portion of the data to identify value driver candidates. To overcome this deficiency, the Examiner found that Brown described valuation using neural networks and training neural network models for aspects of financial performance using indicators. The Examiner concluded that it would have been obvious to a person of ordinary skill in the art to have combined Bielinski and Brown to take advantage of neural networks to increase accuracy of models (Answer 3:Bottom ¶ - 4:Full page).

The Appellant contends that Bielinski[1] and Brown: (1) teach away from the proposed combination; (2) would require a change in operating principle; (3) if combined, would destroy the ability of one of the methods to function; (4) fails to make the invention as a whole obvious; and (5) fails to meet any of the criteria for establishing a prima facie case of obviousness (Br. 12:Third ¶).

Teaching Away

(1) The Appellant argues that Rappaport's description of only three market value determinants, is incompatible with Brown's forty determinants (Br. 12:Bottom ¶).

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[1] The Appellant relies on Rappaport to support many of its arguments regarding Bielinski, apparently treating Rappaport as having been incorporated by reference within Bielinski, based on Bielinski's described usage of Rappaport's Shareholder Value Analysis (Bielinski, 30:First full ¶). The Brief somewhat confusingly attributes text actually found in Rappaport to Bielinski. In this opinion, when we refer to Rappaport's text, based on either the Appellant's contentions, or on our own analysis and fact finding, we attribute that text to Rappaport.

We initially find that here, as throughout the arguments in the Brief, the Appellant has somewhat rhetorically attributed the teachings of Rappaport, and in particular certain assertions within Rappaport, to Bielinski as a device to discredit the combination of Bielinski and Brown. While Bielinski refers to the teachings of Rappaport, as we noted in footnote [1], this does not necessarily mean that everything taught and asserted by Rappaport is necessarily embraced by Bielinski's teachings. In particular, Bielinski distinguishes its VBM technique from Rappaport's SVA technique (FF 09).

As to the merits of the Appellant's argument, although Rappaport describes that three factors determine stock prices (FF 29), we find that Bielinski describes several market value drivers and implies there are more (FF 19). Also, we find that Bielinski describes drivers of varying scope (FF 12), such that the broadest drivers taught by Rappaport can be broken down into more drivers more directly linked to operations.

On the other hand, the forty indicators taught by Brown that the Appellant contends are incompatible relate to portfolio analysis across multiple companies (FF 26) rather than analysis of a single company as taught by Bielinski (FF 04). It is hardly surprising and totally irrelevant that an application comparing multiple companies might use more indicators than a single company.

The Appellant has not sustained its burden of showing the Examiner erred.

(2) The Appellant argues that Bielinski's teachings imply an efficient market, which is incompatible with an inefficient market implied by Rappaport (Br. 13:Top ¶).

The Appellant bases this argument again on Rappaport rather than Bielinski as such, pointing to Rappaport's description of a market risk quantifier, beta (FF 28).

The Appellant contrasts this with Brown's use of neural networks to select individual stocks in a portfolio (FF 26). Thus, the Appellant has, as in the previous argument, assigned an SVA teaching by Rappaport to Bielinski that is not necessarily applicable to Bielinski's VBA, and compared Bielinski's single company analysis to Brown's example of portfolio analysis. More to the point, we find there is nothing fundamentally incompatible between a measure of market risk and portfolio selection as suggested by the Appellant, particularly since it is widely known that the purpose of portfolios is to manage risk. None of the three references make any connection between their teachings and either an efficient or inefficient market hypothesis.

The Appellant has not sustained its burden of showing the Examiner erred.

(3) The Appellant argues that Bielinski's reliance on long term cash flow analysis is incompatible with Brown's short term analysis, and that Bielinski specifically teaches away from the use of projections for any aspect of analysis (Br. 13:Second ¶).

We again find that the Appellant compared Bielinski's single company analysis to Brown's example of portfolio analysis, as the short term analysis pointed to by the Appellant (Brown 56:reference to 80% monthly turnover) is again within the investment analysis examples of Brown.

We further find that the Appellant is conflating the two distinct operations performed by Bielinski's VBM. In particular, Bielinski first tests the sensitivity of long term historical cash flow to different operating assumptions about past operations (FF 10). Then Bielinski applies the results of this sensitivity analysis to future strategic action (FF 11). Contrary to the Appellant's contention, Bielinski specifically teaches the use of projections in this phase of the analysis.

Bielinski does not characterize the time frame for analysis of future action, but we find that such projected time frames typically include relatively short term time frames because of the inherent uncertainty in projections that increases with time frame. We further find that there is nothing in Bielinski that would suggest that the time frame for the projection phase of the analysis is incompatible with a shorter time frame.

The Appellant has not sustained its burden of showing the Examiner erred.

(4) The Appellant argues that Rappaport's use of a tree based model topology is incompatible with Brown's network topology (Br. 13:Third ¶).

The Appellant has made a broad contention of the incompatibility of these methods without a specific showing of the nature of their incompatibility. The Appellant bases this argument again on Rappaport rather than Bielinski as such, contending that Rappaport implicitly teaches a tree methodology. We find that nothing in Rappaport specifically refers to a tree based model topology. Rappaport presents a figure of a tree diagram to represent the hierarchical nature of organizational costs and activities (FF 33), but makes no representation as to how this is incorporated within the model.

Even if Bielinski's VBM were to employ a tree based methodology, we find nothing inconsistent with employing a neural network within each of the branches of the tree's analysis. Further, we find nothing incompatible with assigning neural network analysis to Bielinski's phase of finding driver candidates as in claim 69 element [1.b.] and assigning a tree based induction model to identify drivers as in element [1.c.]. The Appellant has not made any contention otherwise.

The Appellant has not sustained its burden of showing the Examiner erred.

(5) The Appellant argues that Bielinski's usage of sensitivity analysis is incompatible with Brown's neural network scoring for the same data (Br. 13:Bottom ¶).

We again find that the Appellant compared Bielinski's single company analysis to Brown's example of portfolio analysis, as the scoring pointed to by the Appellant (Brown 56:reference to ranking of future returns of stocks) is again within the investment analysis examples of Brown.

Further, Bielinski applies the results of its sensitivity analysis to future strategic action (FF 11). Similarly, Brown applies its results to future strategic actions (FF 22). We find nothing incompatible between using the results of sensitivity analysis, their implications for future actions, and the results of neural networks for suggesting future actions.

The Appellant goes on to argue that Bielinski and Brown are measuring the same thing and there would be no point in using two methodologies to measure the same thing (Br. 13:Bottom ¶). We find this is not an argument of incompatibility, but of so much compatibility as to be redundant. We further find that Bielinski and Brown base their analysis on different inputs (Bielinski using cash flows and Brown using large databases) and the use of different analytical methods to converge on a common result to reduce uncertainty is widely known and applied.

The Appellant has not sustained its burden of showing the Examiner erred.

Changing Principle of Operation

The Appellant argues that Bielinski and Rappaport's Shareholder Value Analysis (SVA) would change Brown's neural network because it would use a tree based analysis, acknowledge that the efficient market theory does not explain all

value changes, and acknowledge that cash flow explains only a portion of the value of an enterprise (Br. 14:Top ¶). The Appellant further argue that Bielinski's Value Based Management (VBM) would change Brown's strict reliance on historical cash flow and the related prohibition against using projections of any kind (Br. 14:Second ¶).

We find that these contentions are all repetitions of those made under the rubric of teaching away, *supra*, but couched as changing principles of operation, and our findings are the same. The Appellant has made no contention specifically demonstrating that the combination of Bielinske and Brown would necessarily change the principles of their operation, particularly since Brown's neural network might be used in performance of element [1.b.] and Bielinski's VBM in performance of [1.c.] of claim 69, thus not requiring any overlap of their operation.

The Appellant has not sustained its burden of showing the Examiner erred.

Destruction of Ability to Function

The Appellant argues that VBM requires that inputs to each node in a tree arithmetically combine to produce an input to a higher level in the tree. The Appellant contends that use of a neural network would destroy the ability to arithmetically generate the numbers required at each tree node. The Appellant similarly contends that the use of a tree would destroy the neural network's ability to function (Br. 14:Bottom ¶ - 15:Top ¶).

We find that these contentions are all repetitions of those made under the rubric of teaching away, *supra*, but couched as destroying the ability to function, and our findings are the same. The Appellant has made no contention specifically demonstrating that the combination of Bielinske and Brown would necessarily destroy the abilities of their operation, particularly since Brown's neural network

might be used in performance of element [1.b.] and Bielinski's VBM in performance of [1.c.] of claim 69, thus not requiring any overlap of their operation.

The Appellant has not sustained its burden of showing the Examiner erred.

Failure to Make Invention as a Whole Obvious

The Appellant repeats the arguments regarding teaching away and concludes that the invention is therefore not obvious as a whole (Br. 15:First full ¶).

We find that these contentions are all repetitions of those made under the rubric of teaching away, *supra*, but couched as making the invention as a whole obvious, and our findings are the same.

The Appellant has not sustained its burden of showing the Examiner erred.

Failure to Make Prima Facie Case for Obviousness

The Appellant argues (1) there is no evidence for the motivation to combine the references; (2) there is no reasonable expectation of success for the same reasons the combination would destroy their ability to function; and (3) the combination fails to include optimization techniques (Br. 15:Bottom ¶ - 16:Top three ¶'s).

We find that both Bielinski and Brown describe analytical techniques employed to find drivers for improving organizational performance. Brown teaches that neural networks may be used to analyze past business transactions so they can understand customers' buying patterns, whereas Bielinski teaches how VBM sensitivity analysis of past results offers clues to what can be done in the future and which value drivers should receive the most attention to achieve optimal rewards. Thus both are directed towards analysis of past business operations to offer clues to changing future operations to improve business performance. It

would have been obvious to a person of ordinary skill in the art to have adapted techniques from each of Brown and Bielinski to provide the advantages of each technique in improving overall performance.

The Appellant has not sustained its burden of showing the Examiner erred.

Reply Brief

We find that the Appellant has made general allegations that the combination of Bielinski and Brown fails to teach or suggest any of the claim limitations of claims 77-103 for the first time in the Reply Brief. A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim. 37 C.F.R. 41.37(c)(1)(vii). A general allegation that the art does not teach any of the claim limitations is no more than merely pointing out the claim limitations. Thus, these claims fall along with claim 69.

The Appellant has not sustained its burden of showing that the Examiner erred in rejecting claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over Bielinski and Brown.

CONCLUSIONS OF LAW

The Appellant has not sustained its burden of showing that the Examiner erred in rejecting claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over the prior art.

On this record, the Appellant is not entitled to a patent containing claims 69-103.

DECISION

To summarize, our decision is as follows:

- The rejection of claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over Bielinski and Brown is sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

vsh

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Appeal No: 2007-2745
Application: 09/761,671
Appellant: Jeffrey Scott Eder

Board of Patent Appeals and Interferences
Docketing Notice

Application 09/761,671 was received from the Technology Center at the Board on April 30, 2007 and has been assigned Appeal No: 2007-2745.

A review of the file indicates that the following documents have been filed by appellant:

Appeal Brief filed on:	October 03, 2006
Reply Brief filed on:	January 27, 2007
Request for Hearing filed on:	NONE

In all future communications regarding this appeal, please include both the application number and the appeal number.

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By order of the Board of Patent Appeals and Interferences